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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,838	10/09/2003	Jackson Hsieh	2011129	2725

7590 10/19/2004

PRO-TECHTOR INTERNATIONAL  
20775 Norada Court  
Saratoga, CA 95070-3018

EXAMINER
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TRAIL, ALLYSON NEEL

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/683,838

Applicant(s)

HSIEH ET AL.

Examiner

Allyson N Trail

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

1. This application is in condition for allowance except for the following matters:

***Claim Objections***

2. Claims 1-3, and 5 are objected to because of the following informalities:

Re claim 1, line 2: Substitute "A upper" with --An upper--.

Re claim 1, lines 2 and 14: Substitute "includes" with --including--.

Re claim 1, line 6: Substitute "the through holes" with --through holes--.

Re claim 1, lines 7 and 19: Substitute "penetrated" with --penetrate--.

Re claim 1, lines 11 and 23: Substitute "coated" with --coating--.

Re claim 1, lines 12 and 26: Substitute "top memory" with --upper memory--.

Re claim 1, line 26: Substitute "bottom memory" with --lower memory--.

Re claim 2, line 2: Substitute "top memory" with --upper memory--.

Re claim 3: Substitute the current claim with the following: --The stacked small memory card according to claim 1, wherein the metal, which is filled within each of the through holes of the first substrate, is copper--.

Re claim 5, line 2: Substitute "bottom memory" with --lower memory--.

Appropriate correction is required.

3. Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS ACTION IS SET TO EXPIRE **TWO MONTHS** FROM THE DATE OF THIS LETTER.

***Allowable Subject Matter***

4. Claims 1-7 would be allowable upon the correction of the objections to claims 1-3, and 5.

5. The following is an examiner's statement of reasons for allowance: The best prior art of record, taken alone or in combination, fails to specifically teach or fairly suggest the stacked small memory card to be set in an electric device, disclosed in the current invention. Although prior art has teachings of stacked small memory cards, the prior art taken of record fails to teach each of the specific and detailed limitations of the claimed stacked card. These features include the stacked small memory card comprising an upper and lower memory card. Both upper and lower memory cards include a substrate, at least one memory chip, a heat sink, and a glue layer. The respective substrates are formed with an upper and lower surface. For the upper memory card, the upper surface of the substrate is formed with a plurality of connected points and golden fingers. For the lower memory card the connected points and golden fingers are formed on the lower surface of the substrate. The golden fingers of both the upper and lower memory cards are electrically connected to the plurality of connected points and a plurality of through holes, which are filled with metal. The through holes penetrate the upper surface to the lower surface. The both the upper and lower memory cards include at least one memory chip. In the case of the upper memory card, the chip is mounted on the upper surface of the substrate. The chip is mounted on the lower surface of the substrate in the lower memory card. The memory chip in both the upper and lower memory cards is connected to the connecting points of the substrate. The

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upper memory card's heat sink is mounted on the lower surface of the substrate and is contacted with metal, which is filled within the through holes. The heat sink is mounted on the upper surface in the lower memory card. Each card includes a glue layer coating the memory chip, which is used to arrange in an electric device, so that, the golden fingers of the substrate may be electrically connected to the electric device. The first sink of the upper memory card is mounted on the heat sink of the lower memory card.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Verma et al (20040169285), Ohta et al (2004/0159709), Kim et al (2003/0157748), Kellar et al (2004/0142540), and Nishimura (2004/0152276).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Allyson N. Trail* whose telephone number is (571) 272-2406. The examiner can normally be reached between the hours of 7:30AM to 4:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (571) 272-2398. The fax phone number for this Group is (703) 872-9306.

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Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [allyson.trail@uspto.gov].

*All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.*

Allyson N. Trail  
Patent Examiner  
Art Unit 2876  
October 17, 2004

*Jared J. Fureman*  
**JARED J. FUREMAN**  
**PRIMARY EXAMINER**